

CLAIMS

1. A method of producing a fibre reinforced structural element including a plurality of bolt fixtures, bolts or fittings for the fixation of said structural element to another structural element, comprising the steps of:

5 i) providing an elongated core element of a material, preferably fibre reinforcement material compatible with the materials of said fibre reinforced structural element, preferably made through pulltrusion, having an end part for the mounting or fixation of one of said bolt fixtures, bolts or fittings,

10 ii) mounting said one bolt fixture, bolt or fitting on said end part of said core element for producing a subassembly,

15 iii) fixating said one bolt fixture, bolt or fitting relative to said end part of said core element in a pulltrusion process by pulling said subassembly through a pulltruder, by circumferentially covering said subassembly with reinforcing fibres and resin and by heating and curing said resin for causing said resin to provide in conjunction with said reinforcing fibres a casing circumferentially encircling said subassembly, or alternatively fixating said subassembly by adhesion to said encasing produced in a separate pulltrusion process,

20 iv) machining said subassembly circumferentially encircled within said casing of said reinforcing fibres and said cured resin for providing a bolt fixture, bolt assembly or fitting assembly including said core element and said one bolt fixture, bolt or fitting and said core element,

25 v) repeating said steps i-iv for producing a plurality of said bolt fixtures, bolt assemblies or fitting assemblies,

vi) positioning said plurality of assemblies according to the intentional position of said plurality of bolt fixtures, bolts or fittings within said final fibre reinforced structural element, and

30 vii) producing said fibre reinforced structural element including said plurality of bolt fixtures, bolts or fittings constituted by said pluralities of assemblies in an extrusion, a pulltrusion or a fibre reinforcing production technique.

2. The method according to claim 1, said step i) of providing said elongated core element comprising the step of cutting said elongated core element from a continuous, elongated core element body.

5 3. The method according to any of the claims 1 and 2, said elongated core element having respective end parts for receiving a respective bolt fixture, bolt or fitting at said respective end parts, said steps ii) and iii) comprising mounting and fixating two bolt fixtures, bolts or fittings at said respective end parts of said core element of said subassembly, and said step iv) comprising machining said
10 subassembly circumferentially encircled within said casing of said reinforcing fibres and said cured resin into two halves each constituting a bolt fixture, bolt or fitting assembly.

15 4. The method according to any of the claims 1-3, said step i) further comprising the step of machining said end part into a specific configuration for the receiving and centring of said bolt fixture, bolt or fitting having an end recess part congruent with said specific configuration of said end part of said core element.

20 5. The method according to any of the claims 1-4, said casing being produced in step iii) having a specific cross-sectional configuration such as a circular, an elliptical, a polygonal, in particular a hexagonal or square cross-sectional configuration or alternatively a combination of the above mentioned cross-sectional configurations.

25 6. The method according to any of the claims 1-5, said step iv) further comprising the step of machining said casing into a specific cross-sectional configuration such as a circular, an elliptical, a polygonal, in particular a hexagonal or square cross-sectional configuration or alternatively a combination of the above mentioned cross-sectional configurations.

30 7. The method according to any of the claims 1-6, said step iv) comprising the step of providing said bolt fixture, bolt assembly or fitting assembly having an

end surface part defining an acute angle relative to the longitudinal axis of said bolt fixture or bolt assembly.

8. A method of producing a bolt fixture, bolt assembly or fitting assembly for use in a fibre reinforced structural element including a plurality of bolt fixtures, bolts or fittings for the fixation of said structural element to another structural element, comprising the steps of:

i) providing an elongated core element of a material, preferably fibre reinforcement material compatible with the materials of said fibre reinforced structural element, preferably made through pulltrusion, having an end part for the mounting or fixation of one of said bolt fixtures, bolts or fittings,

ii) mounting said one bolt fixture, bolt or fitting on said end part of said core element for producing a subassembly,

iii) fixating said one bolt fixture, bolt or fitting relative to said end part of said core element in a pulltrusion process by pulling said subassembly through a pulltruder, by circumferentially covering said subassembly with reinforcing fibres and resin and by heating and curing said resin for causing said resin to provide in conjunction with said reinforcing fibres a casing circumferentially encircling said subassembly, or alternatively fixating said subassembly by adhesion to said encasing produced in a separate pulltrusion process, and

iv) machining said subassembly circumferentially encircled within said casing of said reinforcing fibres and said cured resin for providing a bolt fixture, bolt assembly or fitting assembly including said core element and said one bolt fixture, bolt or fitting and said core element.

9. The method according to claim 8 of producing a bolt fixture, bolt assembly or fitting assembly further comprising any of the features of the method of producing a fibre reinforced structural element according to any of the claims 2-7.

10. A fibre reinforced structural element including a plurality of bolt fixtures, bolts or fittings for the fixation of said structural element to another structural element, said fibre reinforced structural element being produced in accordance with the method according to any of the claims 1-7 and including a plurality of bolt

fixtures, bolt assemblies or fitting assemblies produced in accordance with the method according to any of the claims 8 or 9.

- 5 11. A bolt fixture, bolt assembly or fitting assembly for use in a fibre reinforced structural element being produced in accordance with the method according to any of the claims 8 or 9.